

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-11 (Canceled)

12. (Previously Presented) A method for identifying an agent that modulates sphingolipid metabolism, comprising:

(a) culturing a mutant yeast strain with sphingosine in the absence and presence of a candidate agent under conditions and for a time sufficient to observe in said mutant yeast strain an altered level of either (i) at least one sphingolipid intermediate, or (ii) activity of at least one component of a sphingolipid pathway, wherein:

the mutant yeast strain comprises a null allele of a dihydrosphingosine-1-phosphate lyase 1 (DPL1) gene and a long chain base kinase 4 (LCB4) gene and wherein said mutant strain of yeast has been genetically altered to express at least one nonendogenous sphingosine kinase (SK), wherein the nonendogenous SK comprises the amino acid sequence set forth in SEQ ID NO: 21, or a variant thereof having an amino acid sequence with at least 95% identity to the amino acid sequence of the nonendogenous SK, wherein the variant retains SK enzymatic activity, and wherein the mutant yeast strain exhibits growth inhibition in the presence of sphingosine; and

(b) comparing the level of either (i) or (ii) in the mutant yeast strain cultured in the presence of the candidate agent to the level of either (i) or (ii) in the mutant yeast strain cultured in the absence of the candidate agent, wherein an altered level in the presence of the agent indicates the agent modulates sphingolipid metabolism.

13. (Previously Presented) The method of claim 12 wherein said altered level of said at least one sphingolipid intermediate comprises a decrease in sphingosine-1-phosphate (S-1-P).

14. (Previously Presented) The method of claim 13 wherein said altered level of said activity of at least one component of a sphingolipid pathway comprises a decrease in the activity of said at least one nonendogenous SK.

15. (Canceled)

16. (Previously Presented) A method for identifying an agent that modulates sphingolipid metabolism, comprising:

(a) culturing a null mutant yeast strain with sphingosine in the absence and presence of a candidate agent under conditions and for a time sufficient to observe altered growth of said mutant yeast strain, wherein:

the mutant yeast strain comprises a null allele of a DPL1 gene and a LCB4 gene and wherein said mutant strain of yeast has been genetically altered to express at least one nonendogenous SK, wherein the nonendogenous SK comprises the amino acid sequence set forth in SEQ ID NO: 21, or a variant thereof having an amino acid sequence with at least 95% identity to the amino acid sequence of the nonendogenous SK, wherein the variant retains SK enzymatic activity, and wherein the mutant yeast strain exhibits growth inhibition in the presence of sphingosine; and

(b) comparing growth of the mutant yeast strain in the presence of the candidate agent to growth of the mutant yeast strain in the absence of the candidate agent, wherein an increase in growth of said mutant yeast strain in the presence of the candidate agent indicates the agent modulates sphingolipid metabolism.

17.-19 (Canceled)

20. (Previously Presented) A method for identifying an agent that modulates sphingolipid metabolism, comprising:

(a) culturing a mutant yeast strain with an inducer in the absence and presence of a candidate agent under conditions and for a time sufficient to observe in said mutant yeast strain an altered level of either (i) at least one sphingolipid intermediate, or (ii) activity of at least one component of a sphingolipid pathway, wherein:

the mutant yeast strain comprises a null allele of a DPL1 gene and a LCB4 gene and wherein said mutant strain of yeast has been genetically altered to express at least one nonendogenous SK under the control of a promoter that is induced by the inducer, wherein the nonendogenous SK comprises the amino acid sequence set forth in SEQ ID NO: 21, or a variant thereof having an amino acid sequence with at least 95% identity to the amino acid sequence of the nonendogenous SK, wherein the variant retains SK enzymatic activity, and wherein the mutant yeast strain exhibits growth inhibition in the presence of the inducer; and

(b) comparing the level of either (i) or (ii) in the mutant yeast strain cultured in the presence of the candidate agent to the level of either (i) or (ii) in the mutant yeast strain cultured in the absence of the candidate agent, wherein an altered level in the presence of the agent indicates the agent modulates sphingolipid metabolism.

21. (Previously Presented) The method of claim 20 wherein said altered level of said at least one sphingolipid intermediate comprises a decrease in phosphorylated long chain bases (LCBPs).

22. (Previously Presented) The method of claim 20 wherein said altered level of said activity of at least one component of a sphingolipid pathway comprises a decrease in the activity of said at least one nonendogenous SK.

23.-25 (Canceled)

26. (Previously Presented) The method of claim 20 wherein the mutant yeast strain further comprises a null allele of yeast sphingosine resistance 2 (YSR2).

27. (Previously Presented) A method for identifying an agent that modulates sphingolipid metabolism, comprising:

(a) culturing a null mutant yeast strain with an inducer in the absence and presence of a candidate agent under conditions and for a time sufficient to observe altered growth of said mutant yeast strain, wherein:

the mutant yeast strain comprises a null allele of a DPL1 gene and a LCB4 gene and wherein said mutant strain of yeast has been genetically altered to express at least one nonendogenous SK under the control of a promoter that is induced by the inducer, wherein the nonendogenous SK comprises the amino acid sequence set forth in SEQ ID NO: 21, or a variant thereof having an amino acid sequence with at least 95% identity to the amino acid sequence of the nonendogenous SK, wherein the variant retains SK enzymatic activity, and wherein the mutant yeast strain exhibits growth inhibition in the presence of the inducer; and

(b) comparing growth of the mutant yeast strain in the presence of the candidate agent to growth of the mutant yeast strain in the absence of the candidate agent, wherein an increase in growth of said mutant yeast strain in the presence of the candidate agent indicates the agent modulates sphingolipid metabolism.

28.-29 (Canceled)

30. (Previously Presented) The method of claim 27 wherein the mutant yeast strain further comprises a null allele of YSR2.

31. (Canceled)